

Interdisciplinary Interaction Issues in Orthodontics

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Abstract:

In modern conditions of dental practice, the interdisciplinary interaction issue is extremely urgent and acute. The high level of training and literacy of narrow specialists allows dentists to look broadly at the whole spectrum of dental problems. The global development of modern dentistry requires specialized specialists to join forces to achieve new high goals, change priorities and expand their views. And all our efforts pursue one goal: to do the best that is in our power for the patient. The world-famous luminaries of modern orthodontics, such as Prof. William R. Proffit, Prof. Vincent G. Kokich, Prof. Charles J. Burston and others recognize the importance and devote particular attention to this issue in their writings. In 21st century medicine, when an orthodontist offers the best treatment and the best care to his patient, the specialists involvement from related fields in the oral rehabilitation process is the best indicator of our patient care.

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In 21st century medicine, when an orthodontist offers the best treatment and the best care to his patient, the specialists' involvement from allied fields in the oral cavity rehabilitation process is the best indicator of our patient care.

Speaking about interdisciplinary cooperation, we are talking not only about dentists, such as a therapist, orthopedist, orthodontist, periodontist, maxillofacial surgeon, but also about motor otorhinolaryngologists, allergists, neurologists and even osteopaths.

Computerization and the technologies development expand the horizons in diagnostics, treatment, prevention, and simply in the daily routine work of dentists in various fields. In modern realities, a competent doctor understands that one is not a warrior in the field and connects his colleagues to work with the patient to provide better treatment and rehabilitation.

This is especially true in cases associated with secondary deformation of the dentition in connection with the permanent teeth loss due to caries complications [1]. Orthopedic surgeons are faced with the problem of dental alveolar lengthening, the medial tilt of the posterior teeth, the spaces appearance between the teeth, and it is often not possible to cope with these problems alone. Such a one-sided approach will not give an adequate maximum result. And then the orthodontist rushes to the rescue, armed with braces, microimplants and springs [2]. The orthodontist uses the entire knowledge arsenal and modern orthodontics mechanisms to restore the position of displaced teeth, intrusion, distalization, upwringing and other displacement types to achieve optimal occlusion.

The research purpose was the studying theme the importance of interdisciplinary interaction between various specialties doctors, both in dentistry and in related specialties.

Research results: Patient H. D., who was born in 1991, came to the clinic. He was 25 years old at the time of his request. Complaints were about the reverse incisor overlap, the lower jaw protrusion, gaps between the lateral teeth in the lower jaw due to the 35 and 45 teeth loss. After collecting diagnostic data and making a diagnosis, it was decided to install a removable device (articular splint) on the lower jaw. For correction in the sagittal direction, an inclined plane was provided on the device, and then the correction was performed on a DamonQ bracket. After reaching normal overlap, work began to redistribute the space and prepare the patient for implantation. The correct ratio of canines and molars was achieved according to Engle class I classification. After the dental implants installation in the lost teeth area and after three months allotted for osseointegration, the patient was successfully fitted with artificial crowns. (Fig. 1)





Fig 1 Intraoral photographs of patient H. D., 25 years old. Before treatment, during and after the installation of artificial crowns on dental implants

Patient B.S., 46 years old, came to the clinic with a complaint of the absence of 46 and 47 teeth. Due to the long-term loss of these teeth, a dentoalveolar lengthening of the antagonist occurred. Microimplants were installed on the vestibular and palatal sides of the 16th tooth, and within 5 months the intrusion of the 16th tooth was performed using elastic traction. Thus, adequate space was obtained for high-quality dental implant prosthetics and good occlusion was achieved. (Fig. 2)



Fig 2 Intraoral photographs of patient B.C., 46 years old, during and after treatment

In cases of permanent teeth retention, an orthodontist cannot do without the help of a dental surgeon, who makes his invaluable contribution to pulling out process the impacted tooth, and then this fruitful cooperation gives its results. It allows you to restore the dentition integrity with care for function and aesthetics.

A 16-year-old S.G. patient came to the clinic with a complaint about the 23 teeth absence in the dentition. After collecting

diagnostic data (Fig. 3), it was found that the 23rd tooth was impacted. The canine is part of the smile line and is an important part of the facial and smile aesthetics. To solve the retention problem, a bracket system was installed on both jaws to align the dentition. After opening the adequate space, the pulling out process the impacted tooth began. The treatment was completed when an adequate ratio of dentition and aesthetics was achieved. (Fig. 4,5)

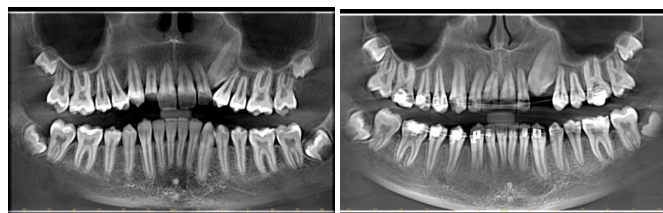


Fig 3 X-ray 3d image of patient S.G. before treatment and in the space opening process.



Fig 4 Intraoral photographs of patient S.G. before treatment



Fig 5. Intraoral photographs of patient S.G. after the end of treatment

In those moments when general practitioners, during the diagnosis, reveal the primary adentia of permanent teeth, it

is the orthodontist who takes over the relay of helping the patient. Places braces and creates an adequate space for the dental implants placement and, in turn, involves a surgeon-implantologist and an orthopedist in the rehabilitation process for the further prosthetics purpose. It is such a well-coordinated and skillful work of different specialties doctors that brings satisfaction both to professionals in their field and to patients who turn to us for help.

The parents of a 7-year-old girl S.O. turned to the clinic with anxiety about the possible absence of 12 and 22 teeth. The therapist - dentist, who had a girl, knowing the family history of primary adentia of the 12th and 22nd teeth in the mother, and noting the importance of the genetic and hereditary factors influence on this pathology formation, advised to undergo an X-ray examination for these teeth presence or absence. After revealing the primary adentia of 12 and 22 teeth, the patient was referred to an orthodontist for further observation. Due to the slight narrowing of the upper dentition, an apparatus for expanding the upper dentition was made. After reaching the expansion and after the retention period, it was proposed to install a bracket system on the upper and lower jaws. The patient also had microdentia. It was decided to prepare the space for further implantation. By the age of 17, orthodontic treatment was completed and retention devices were installed. After the patient reached 18 years old, it was decided to perform implantation. After the expiration of the period allotted for osseointegration, artificial crowns were installed on the dental implants in the 12 and 22 teeth area. (Fig. 6)



Fig 6 Intraoral photographs of patient S.O. before installing the bracket system and after installing the retention device

A 16-year-old patient H.G. came to the clinic with gaps complaints between the teeth, lack of contact between the upper and lower dentition in the anterior region. After collecting diagnostic data, primary adentia of the 35th tooth was found. A bracket system was installed on the upper and lower dental arches. Medical measures were taken to solve orthodontic problems, the lost space in the 35th tooth area was also restored, as a result of which the surgeon, the implantologist, was able to carry out surgery to install a dental implant, and after the time expiration allotted for osseointegration, an artificial crown was installed. Due to the measures complex taken to eliminate the problems, the patient received a beautiful smile and the functional dentition component was restored. (Fig. 7)



Fig 7 Intraoral photographs of patient H.G. before and after treatment

But not only adults need such an integrated approach. Unfortunately, our smallest patients sometimes face early loss of milk molars and it is in the power of a competent doctor - therapist to prevent medial displacement, as well as permanent molars rotation. By sending the patient to the orthodontist in a timely manner to install an apparatus to retain space, the therapist will thereby help the baby to avoid significant complications in the future.

Patient M.U., 8 years old, turned to the clinic due to the need for oral cavity sanitation and was sent to an orthodontist by a physician-therapist to carry out preventive measures in connection with the early loss of milk molars. The orthodontist, in turn, made a removable apparatus to retain space in order to prevent 36 and 46 teeth displacement.

The anomalies problem in the shape and size of permanent teeth, for example, the "subulate" shape of lateral incisors or microdentia, brings us to the dentist's office, who, in turn, will make a high-quality restoration of these teeth or to the orthopedic dentist's office with a request to restore the shape and size using veneers.

A 16-year-old female patient D.A. came to the clinic with an unsatisfactory aesthetics complaint when smiling. After collecting diagnostic data, an anomaly in the maxillary lateral incisors size was found. It was decided to install a bracket system on both jaws in order to align the dentition and achieve optimal occlusion. A space was prepared for a therapist to carry out work on the size and shape restoration of the 12th and 22nd teeth. Upon the treatment completion, the ratio of canines and molars according to Engle class I was achieved, adequate overlap was established, and the patient's desire for aesthetics was satisfied. (Fig.8)



Fig 8 Intraoral photographs of patient D.A. before and after treatment

In modern conditions of orthodontic practice, one cannot fail to mention the invaluable contribution of doctors - otorhinolaryngologists and allergists. Indeed, it is precisely their timely intervention and competent treatments that help the orthodontist prevent the pathology development and facilitate correction in case of the upper jaw development violation due to unsatisfactory nasal breathing.

Summarizing all of the above, modern orthodontics is moving by leaps and bounds towards expanding the integration boundaries with other related specialties. This kind of interdisciplinary interaction for the competent purpose and patients' full-fledged rehabilitation brings enormous benefits.

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